Question Paper Preview

Question Paper Name: Mechanical Engineering
Subject Name: Mechanical Engineering

Mathematics

Number of Questions:	50
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 1 Question Id : 6780945604 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the traces of A and B are 20 and -8 then the trace of (A+B) is ___

Options :

1. 12
2. -12
3. 28
4. -28

Question Number : 2 Question Id : 6780945605 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A=\begin{bmatrix} x & 1 \\ 1 & 0 \end{bmatrix}$ is an involutory matrix then x=

Options :

1. 0
2. –2
3. –1
4. 2

Question Number : 3 Question Id : 6780945606 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The determinant of $\begin{bmatrix} \log e & \log e^2 & \log e^3 \\ \log e^2 & \log e^3 & \log e^4 \\ \log e^3 & \log e^4 & \log e^5 \end{bmatrix}$ is ___

Options :

1. 0
2. 1
3. $4\log e$
4. $5\log e$

Question Number : 4 Question Id : 6780945607 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A=\begin{bmatrix} 1 & 1 & 0 \\ 2 & 1 & 3 \\ 0 & 1 & 2 \end{bmatrix}$ then $\det(adjA) =$ ___

Options :

1. $\det A$
2. $\det A^2$
3. $-\det A$
4. $(\det A)^2$

Question Number : 5 Question Id : 6780945608 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If A, B are two matrices and $AB=B$, $BA=A$ then $A^2+B^2=$

Options :

1. $A+B$
2. $A-B$
3. AB
4. 0

Question Number : 6 Question Id : 6780945609 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\frac{3x+2}{(x+1)(2x^2+3)}=\frac{A}{x+1}+\frac{Bx+C}{2x^2+3}$, then $A+C-B=$ ___

Options :

1. 0
2. 2
3. 3
4. 5

Question Number : 7 Question Id : 6780945610 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\frac{3x}{(x-a)(x-b)}=\frac{2}{x-a}+\frac{1}{x-b}$ then $a:b=$ ___

Options :

1. $-2:1$
2. $2:1$
3. $1:2$
4. $3:1$

Question Number : 8 Question Id : 6780945611 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\tan 855°=$ ____

Options :

1. 1
2. $\frac{1}{\sqrt{2}}$
3. -1
4. $-\frac{1}{\sqrt{2}}$

Question Number : 9 Question Id : 6780945612 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\tan\alpha=\frac{m}{m+1}$ and $\tan\beta=\frac{1}{2m+1}$ then $\tan(\alpha+\beta)=$ ____

Options :

1. -1
2. 0
3. 1
4. 2

Question Number : 10 Question Id : 6780945613 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $6\sin 20° - 8\sin^3 20° =$

Options :

1. 2
2. $\frac{1}{\sqrt{2}}$
3. $\sqrt{3}$
4. $\frac{1}{\sqrt{3}}$

Question Number : 11 Question Id : 6780945614 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $3\sin\theta + 4\cos\theta = 5$ then the value of $4\sin\theta - 3\cos\theta =$

Options :

1. 0
2. -1
3. 1
4. 2

Question Number : 12 Question Id : 6780945615 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The sine function with period 3 is

Options :

1. $sin\frac{2\pi x}{3}$
2. $sin\frac{\pi x}{3}$

3. $sin\ 3\pi x$

4. $sin\frac{3\pi x}{2}$

Question Number : 13 Question Id : 6780945616 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum value of $3\sin^2 x+5\cos^2 x$ is ____

Options :

1. 8

2. 3

3. 5

4. 34

Question Number : 14 Question Id : 6780945617 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation $\sqrt{3}\sin x+\cos x=4$ has ____

Options :

1. Only one solution

2. two solutions

3. Infinite solutions

4. no solution

Question Number : 15 Question Id : 6780945618 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\mathrm{Cos}^{-1}\left(\sqrt{3}x\right)+\mathrm{Cos}^{-1}x=\frac{\pi}{2}$ is ___

Options :

1. $\frac{1}{2}$

2. $\frac{1}{5}$

3. $-\frac{1}{2}$

4. $-\frac{1}{5}$

Question Number : 16 Question Id : 6780945619 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\sin\theta+\sin(\theta+120°)-\sin(120°-\theta)=$ _____

Options :

1. 0

2. $\sin\theta$

3. 1

4. $-\sin\theta$

Question Number : 17 Question Id : 6780945620 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The principal solution of $3\text{Cosec}A = 4\text{Sin}A$ is ____

Options :

1. $\frac{\pi}{4}$

2. $\pm\frac{\pi}{3}$

3. $\pm\frac{\pi}{6}$

4. $\pm 2\pi$

Question Number : 18 Question Id : 6780945621 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\left|z^2-1\right|=\left|z\right|^2+1.$ then z lies in ____

Options :

1. The real axis

2. a circle

3. The imaginary axis

4. a parabola

Question Number : 19 Question Id : 6780945622 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\left(\frac{1+i}{1-i}\right)^3-\left(\frac{1-i}{1+i}\right)^3=a+ib$, then *a* an *b* are ____

Options :

1. 1,1
2. 2,-2
3. 0,-2
4. 0,-1

Question Number : 20 Question Id : 6780945623 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the line $y=2x+c$ is a tangent to $x^2+y^2=5$ then the value of *c* is ____

Options :

1. 2
2. 3
3. 4
4. 5

Question Number : 21 Question Id : 6780945624 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The vertex of the parabola $x^2+8x+12y+4=0$ is

Options :

1. $(-4,1)$
2. $(4,-1)$
3. $(-4,-1)$
4. $(4,1)$

Question Number : 22 Question Id : 6780945625 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of tangents to the ellipse $\frac{x^2}{4}+\frac{y^2}{2}=1$ through (2,1) is ____

Options :

1. 0

2. 1

3. 2

4. 3

Question Number : 23 Question Id : 6780945626 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the latus rectum of the hyperbola $x^2 - 4y^2 = 4$ is ____

Options :

1. 2

2. 1

3. 4

4. 3

Question Number : 24 Question Id : 6780945627 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the diameter of the circle $x^2 + y^2 - 6x - 8y = 0$ is _____

Options :

1. 10

2. 15

3. 5

4. 20

Question Number : 25 Question Id : 6780945628 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the line $2y = 5x + k$ touches the parabola $y^2 = 6x$ then k= ___

Options :

1. $\frac{2}{3}$

2. $\frac{4}{3}$

3. $\frac{3}{5}$

4. $\frac{6}{5}$

Question Number : 26 Question Id : 6780945629 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\lim_{x\to 2+} \frac{x|x-2|}{x-2} = \_\_\_\_\_$$

Options :

1. 1
2. −1
3. 2
4. −2

Question Number : 27 Question Id : 6780945630 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = (1+x)^{\frac{2}{x}}$ is continuous at $x = 0$ then $f(0) =$ ___

Options :

1. e
2. e^2
3. e^3
4. e^4

Question Number : 28 Question Id : 6780945631 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x = a\sec\theta, y = b\tan\theta$ then $\frac{dy}{dx} =$ ____

Options :

1. $\frac{b}{a}\sec\theta$
2. $\frac{b}{a}\text{cosec}\,\theta$
3. $\frac{a}{b}\sec\theta$
4. $\frac{a}{b}\text{cosec}\,\theta$

Question Number : 29 Question Id : 6780945632 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x^y = e^{x-y}$ then $\frac{dy}{dx} =$ ____

Options :

1. $\frac{\log x}{(1+\log x)^2}$

2. $\frac{\log x}{(1-\log x)^2}$

3. $\frac{-\log x}{(1+\log x)^2}$

4. $\frac{-1}{(1+\log x)^2}$

Question Number : 30 Question Id : 6780945633 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \sin^{-1}\left(\frac{x}{\sqrt{1+x^2}}\right)$ then $\frac{dy}{dx} =$ ____

Options :

1. $-\frac{1}{1+x^2}$

2. $\frac{1}{1+x^2}$

3. $\frac{2}{1+x^2}$

4. $-\frac{2}{1+x^2}$

Question Number : 31 Question Id : 6780945634 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The slope of the normal to the curve $x = a\sec\theta, y = a\tan\theta$ at $\theta = \frac{\pi}{6}$ is ____

Options :

1. 2
2. 0
3. $-\frac{1}{2}$
4. 1

Question Number : 32 Question Id : 6780945635 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The rate of change of area of a circle with respect to radius when r=5cm is

Options :

1. 2π sq.cm/sec
2. 10π sq.cm/sec
3. 100π sq.cm/sec
4. 20π sq.cm/sec

Question Number : 33 Question Id : 6780945636 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following function has maxima or minima?

Options :

1. e^x
2. $\log x$
3. x^3+x^2+x+1
4. $\sin x$

Question Number : 34 Question Id : 6780945637 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the increase in the side of a square is 2% then the approximate percentage increase in the area of the square is _____

Options :

1. 2
2. 4
3. 6
4. 8

Question Number : 35 Question Id : 6780945638 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the function $f(x) = \log(x^2 + y^2)$, which of the following is true?

Options :

1. $f_x + f_y = 0$

2. $f_{xx} + f_{yy} = 0$

3. $f_x - f_y = 0$

4. $f_{xx} - f_{yy} = 0$

Question Number : 36 Question Id : 6780945639 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int \text{cosec}^5\theta \cot\theta d\theta = \_\_\_\_\_$

Options :

1. $\frac{\cot^2\theta}{2}$

2. $\frac{-\text{cosec}^5\theta}{5}$

3. $\frac{\text{cosec}^6\theta}{6}$

4. $\frac{-\text{cosec}^6\theta}{6}$

Question Number : 37 Question Id : 6780945640 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int_2^3 \frac{dx}{x^2 - x} = \_\_\_\_$

Options :

1. $\log\frac{2}{3}$

2. $\log\frac{4}{3}$

3. $\log\frac{8}{3}$

4. $\log\frac{1}{4}$

Question Number : 38 Question Id : 6780945641 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $a<0<b$ then $\int_a^b \frac{|x|}{x}dx =$ _____

Options :

1. $b-a$

2. $a-b$

3. $a+b$

4. 0

Question Number : 39 Question Id : 6780945642 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int_0^1 x\tan^{-1}x dx =$ _____

Options :

1. $\frac{\pi}{4}-\frac{1}{2}$

2. $\frac{\pi}{8}-\frac{1}{2}$

3. $\frac{\pi}{4}+\frac{1}{2}$

4. $\frac{\pi}{8}+\frac{1}{2}$

Question Number : 40 Question Id : 6780945643 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\lim_{n\to\infty}\sum_{r=1}^{n}\frac{1}{n}e^{\frac{r}{n}} =$ _____

Options :

1. e

2. $(1+e)$

3. $(1-e)$

4. $(e-1)$

Question Number : 41 Question Id : 6780945644 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\int_0^{\pi/4} \sec^6 x dx = \_\_\_\_\_$$

Options :

1. $\frac{8}{3}$

2. $\frac{28}{15}$

3. $-\frac{28}{15}$

4. $\frac{4}{5}$

Question Number : 42 Question Id : 6780945645 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The area bounded by the curve $y = \log x$, x-axis and the straight line $x - e = 0$ is _____square units

Options :

1. e

2. $(e-1)$

3. 0

4. $(1-e)$

Question Number : 43 Question Id : 6780945646 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The volume of the solid generated by rotating one arch of the curve $y = Sin3x$ about the x-axis is----

Options :

1. π^2

2. $\frac{\pi^2}{2}$

3. $\frac{\pi^2}{4}$

4. $\frac{\pi^2}{6}$

Question Number : 44 Question Id : 6780945647 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$y = cx - c^2$ is the general solution of the differential equation

Options :

1. $\left(\frac{dy}{dx}\right)^2 - x\left(\frac{dy}{dx}\right) + y = 0$

2. $\frac{d^2y}{dx^2} = 0$

3. $\frac{dy}{dx} = c$

4. $\left(\frac{dy}{dx}\right)^2 + x\left(\frac{dy}{dx}\right) + y = 0$

Question Number : 45 Question Id : 6780945648 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of the differential equation $\frac{dy}{dx} + \frac{y}{3} = 1$ is

Options :

1. $y = 3 + ce^{\frac{x}{3}}$

2. $y = 3 + ce^{-\frac{x}{3}}$

3. $3y = c + e^{\frac{x}{3}}$

4. $3y = c + e^{-\frac{x}{3}}$

Question Number : 46 Question Id : 6780945649 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation corresponding to the family of curves $y = ae^{bx}$, where *a* and *b* are arbitrary constants, is ____

Options :

1. $\frac{d^2y}{dx^2} = y\frac{dy}{dx}$

2. $y\frac{d^2y}{dx^2} - \frac{dy}{dx} = 0$

3. $y\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^2$

4. $\frac{dy}{dx} - y^2 = 0$

Question Number : 47 Question Id : 6780945650 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An integrating factor of the differential equation $(x^2y + y + 1)dx + (x + x^3)dy = 0$ is __

Options :

1. e^x

2. x^2

3. $\frac{1}{x}$

4. x

Question Number : 48 Question Id : 6780945651 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation whose solution is $Ax^2 + By^2$, where A,B are arbitrary constants are of ----

Options :

1. 1^{st} order and 1^{st} degree

2. 2^{nd} order and 1^{st} degree

3. 2^{nd} order and 2^{nd} degree

4. 1^{st} order and 2^{nd} degree

Question Number : 49 Question Id : 6780945652 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of the differential equation $\frac{d^2x}{dt^2}-4\frac{dx}{dt}+5x=0$ is

Options :

1. $x=(c_1\cos t+c_2\sin t)e^{2t}$

2. $t=(c_1\cos x+c_2\sin x)e^{2x}$

3. $x=(c_1\cos 2t+c_2\sin 2t)e^{t}$

4. $t=(c_1\cos 2x+c_2\sin 2x)e^{x}$

Question Number : 50 Question Id : 6780945653 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of $(D-2)^2y=\sin 2x$ is

Options :

1. $\frac{\cos 2x}{8}$

2. $\frac{\sin 2x}{8}$

3. $\frac{-\cos 2x}{2}$

4. $\frac{-\sin 2x}{2}$

Physics

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 51 Question Id : 6780945654 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The unit of impulse is the same as that of

Options :

1. moment of force

2. linear momentum

3. force

4. pressure

Question Number : 52 Question Id : 6780945655 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the force is given by $F = at+bt^2$ where t is the time. The dimensions of a and b are

Options :

1. MLT^{-4}, MLT^{-2}

2. MLT^{-3}, MLT^{-4}

3. ML^2T^{-3}, ML^2T^{-2}

4. ML^2T^{-3}, ML^3T^{-4}

Question Number : 53 Question Id : 6780945656 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Vector parallel to $6\hat{i} + 8\hat{j}$ and having a magnitude of 5 is

Options :

1. $4\hat{i} + 3\hat{j}$

2. $12\hat{i} + 16\hat{j}$

3. $16\hat{i} +8\hat{j}$

4. $3\hat{i} + 4\hat{j}$

Question Number : 54 Question Id : 6780945657 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $|\vec{A} \times \vec{B}| = K(AB)$ then angle between $\vec{A}$ and $\vec{B}$ is

Options :

1. $\cos^{-1}K$

2. $\cos^{-1}(1/K)$

3. $\sin^{-1}K$

4. $\sin^{-1}(1/K)$

Question Number : 55 Question Id : 6780945658 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cricket ball is thrown at a speed of 28 m/s in a direction 30^0 above the horizontal. The maximum height reached by the ball is

Options :

1. 10 m

2. 20 m

3. 30 m

4. 40 m

Question Number : 56 Question Id : 6780945659 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two bodies are projected at angles of 45^0 and 60^0 with the horizontal with same velocity simultaneously. Ratio of their horizontal ranges is

Options :

1. $\sqrt{3}:2$

2. $2:\sqrt{3}$

3. 1:2

4. 2:1

Question Number : 57 Question Id : 6780945660 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A ball thrown by a boy is caught 2 seconds later by another at some distance away on the same level. If the angle of projection is 30^0, the velocity of projection is

Options :

1. 19.6 m/sec

2. 9.8 m/sec

3. 4.9 m/sec

4. 5.2 m/sec

Question Number : 58 Question Id : 6780945661 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 200 m wide river flows with a velocity of 5 m/sec. A man crosses the river in the shortest time of 25 sec. If there is no flow and he swims with the same velocity, the time taken to cross the river is

Options :

1. $\frac{200}{5\sqrt{3}}$ sec

2. 20 sec

3. 25 sec

4. $25\sqrt{2}$ sec

Question Number : 59 Question Id : 6780945662 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body of mass 1 Kg lies on an inclined plane of angle 60^0 to the horizontal. If the coefficient of friction is 0.4, the frictional force along the inclined plane is

Options :

1. 1.96 N

2. 0.98 N

3. 0.49 N

4. 0.245 N

Question Number : 60 Question Id : 6780945663 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A force of 20 Kg weight is required to just slide a wooden box weighing 50 Kg over ice. Then coefficient of static friction between the surfaces in contact is

Options :

1. 0.2

2. 0.4

3. 0.8

4. 0.1

Question Number : 61 Question Id : 6780945664 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cyclist comes to a skidding stop in 10m. During this process, the force on the cycle due to the road is 200N and is directly opposed to the motion. The work done by the road on the cycle is

Options :

1. 1000 J

2. 2000J

3. -1000J

4. -2000J

Question Number : 62 Question Id : 6780945665 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A sphere of mass 4 Kg is dropped from a certain height. After 5s, its kinetic energy is ($g=10\ m/s^2$)

Options :

1. 5J

2. 50 J

3. 5 KJ

4. 50 KJ

Question Number : 63 Question Id : 6780945666 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An elevator weighing 500 kg is to be lifted up at a constant velocity of 0.20 m/s. What would be the minimum power of the motor to be used?

Options :

1. 100 W

2. 500 W

3. 980 W

4. 900 W

Question Number : 64 Question Id : 6780945667 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

At t=0, the displacement of a particle in SHM is half its amplitude. Its initial phase is (referring to mean position)

Options :

1. $\frac{\pi}{6}$

2. $\frac{\pi}{3}$

3. $\frac{2\pi}{3}$

4. $\frac{\pi}{2}$

Question Number : 65 Question Id : 6780945668 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of seconds pendulum is 100 cm. To have a period half of this value, the length is to be reduced by

Options :

1. 25 cm

2. 75 cm

3. 50 cm

4. 100 cm

Question Number : 66 Question Id : 6780945669 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Inside a big hall, the reverberation time is

Options :

1. directly proportional to volume

2. inversely proportional to sound absorption

both directly proportional to volume

and

inversely proportional to sound absorption

3.

depends on temperature

4.

Question Number : 67 Question Id : 6780945670 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The voice of lion is different from that of a mosquito because

Options :

1. the sounds have different pitch

2. they are of different size

3. the two voices travel with different velocities

4. the sounds have different phases

Question Number : 68 Question Id : 6780945671 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A car is travelling at $\frac{v}{10}$ m/s and sounds horn of frequency 990 Hz. The apparent frequency heard by a police chasing the car at $\frac{v}{9}$ m/s (v is the velocity of sound) is

Options :

1. 990 Hz

2. 900 Hz

3. 100 Hz

4. 1000Hz

Question Number : 69 Question Id : 6780945672 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When ice cube melts and becomes water, the ice-water system undergoes a change such that

Options :

1. entropy of the system decreases and internal energy decreases

2. entropy of the system decreases and internal energy increases

3. entropy of the system increases and internal energy increases

4. entropy of the system increases and internal energy decreases

Question Number : 70 Question Id : 6780945673 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A mass of 300 gm falls from a height of 3 m(g=9.8 m/s^2). Assuming that the whole energy is converted into heat, the amount of heat produced is

Options :

1. 2 cal

2. 2.1 cal

3. 4 cal

4. 4.2 cal

Question Number : 71 Question Id : 6780945674 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During an adiabatic expansion of 2 moles of a gas, the change in internal energy was found to be equal to 100 J. The work done during the process will be equal to

Options :

1. zero

2. -100 J

3. 200 J

4. 100 J

Question Number : 72 Question Id : 6780945675 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pressure and density of a diatomic gas ($\gamma = \frac{7}{5}$) change adiabatically from (P,d) to (P^1,d^1). If $\frac{d^1}{d} = 32$, then $\frac{P^1}{P}$ is

Options :

1. 128

2. 32

3. 256

4. 64

Question Number : 73 Question Id : 6780945676 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Boyle's law holds good for an ideal gas during

Options :

1. isobaric changes

2. isothermal changes

3. isochoric changes

4. isotopic changes

Question Number : 74 Question Id : 6780945677 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The threshold frequency of metal is υ_0. When a light of frequency 4 υ_0 is incident on metal then the $K.E_{max}$ of emitted electrons is

Options :

1. $2\upsilon_0 h$

2. $3\upsilon_0 h$

3. $4\upsilon_0 h$

4. $\upsilon_0 h$

Question Number : 75 Question Id : 6780945678 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Superconductors are _____ materials

Options :

1. dielectric

2. paramagnetic

3. ferromagnetic

4. diamagnetic

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 76 Question Id : 6780945679 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Pauli exclusion principle is concerned with

Options :

1. Energy of orbital.
2. Spin of electron.
3. Energy of electron
4. Angular momentum of electron

Question Number : 77 Question Id : 6780945680 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to Bohr's model of hydrogen atom, the following is quantized

Options :

1. Linear momentum
2. Linear velocity
3. Angular momentum
4. Angular velocity

Question Number : 78 Question Id : 6780945681 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How many 'd' – orbitals have two perpendicular nodal planes

Options :

1. Two
2. Three
3. Four
4. Five

Question Number : 79 Question Id : 6780945682 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In sodium chloride crystal, each Na^+ ion is surrounded by

Options :

1. Two Cl^- ions
2. Four Cl^- ions
3. Six Cl^- ions
4. Eight Cl^- ions

Question Number : 80 Question Id : 6780945683 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following molecule contains a π – bond

Options :

1. H_2
2. O_2
3. F_2
4. HCl

Question Number : 81 Question Id : 6780945684 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is insoluble in water?

Options :

1. Alcohol
2. Ammonia
3. Benzene
4. Acetone

Question Number : 82 Question Id : 6780945685 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The normality of 2.3 M H_2SO_4 solution is

Options :

1. 0.46N
2. 0.23 N
3. 2.3 N

4. 4.6N

Question Number : 83 Question Id : 6780945686 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

8 grams of substance of molecular weight 40 is dissolved in 250 g of water. Then the **molality** of the solution is

Options :

1. 0.4

2. 0.8

3. 0.2

4. 0.6

Question Number : 84 Question Id : 6780945687 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pH value of 0.05M $Ba(OH)_2$ solution is

Options :

1. 10

2. 12

3. 13

4. 11

Question Number : 85 Question Id : 6780945688 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following molecule is not a Lewis Base?

Options :

1. H_2O

2. BF_3

3. NH_3

4. CO

Question Number : 86 Question Id : 6780945689 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During the electrolysis of brine, 710 g of Cl_2 was liberated at anode. The weight of NaOH formed

Options :

1. 800 g

2. 400 g

3. 80 g

4. 40 g

Question Number : 87 Question Id : 6780945690 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the Danniel cell, which electrode acts as anode?

Options :

1. Cu

2. Hg

3. Zn

4. Pt

Question Number : 88 Question Id : 6780945691 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The molar conductance of HCl is more than that of NaCl because

Options :

1. NaCl is more polar than KCl

2. NaCl is ionic while HCl is covalent

3. Ionic mobility of H^+ is more than that of Na^+

4. H^+ get hydrated.

Question Number : 89 Question Id : 6780945692 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The units for electrochemical equivalent are

Options :

1. grams

2. grams ampere

3. Coulomb

4. Grams per coulomb

Question Number : 90 Question Id : 6780945693 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Zeolite softening process removes

Options :

1. Only permanent hardness of water
2. Only temporary hardness of water
3. Both temporary and permanent hardness of water
4. The dissolved gases in permanent hard water.

Question Number : 91 Question Id : 6780945694 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The permanent hardness of water is caused by the presence of

Options :

1. Bicarbonates of Ca and Mg
2. Carbonates of Na and K
3. Chlorides and Sulphates of Ca and Mg.
4. Phosphates of Na and K

Question Number : 92 Question Id : 6780945695 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The secondary treatment of water uses _____ to consume wastes in water.

Options :

1. Filtration
2. Sedimentation
3. Chemicals
4. Microorganisms

Question Number : 93 Question Id : 6780945696 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Difficult to monitor and very dangerous form of corrosion is

Options :

1. Galvanic
2. Pitting

3. Crevice

4. Stress

Question Number : 94 Question Id : 6780945697 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When Pt and Co are electrically connected, which one gets corroded?

Options :

1. Co

2. Pt

3. None

4. both

Question Number : 95 Question Id : 6780945698 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What rubber was invented when Dr. Joseph C. Patrick tried to make antifreeze?

Options :

1. Methyl rubber

2. Chloroprene

3. Bruna N

4. Thiokol

Question Number : 96 Question Id : 6780945699 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first plastic ever synthesized was called _____.

Options :

1. Bakelite

2. Nylon

3. Dacron

4. Cellulose

Question Number : 97 Question Id : 6780945700 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____ is a brand of polyester textile fiber that is wrinkle resistant and strong

Options :

1. Cellulose
2. Dacron
3. Bakelite
4. Nylon

Question Number : 98 Question Id : 6780945701 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Water gas is a mixture of

Options :

1. $H_2 + CO$
2. $N_2 + CO$
3. $H_2 + CO_2$
4. $H_2 + CH_4$

Question Number : 99 Question Id : 6780945702 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a greenhouse gas?

Options :

1. CO
2. CO_2
3. water vapour
4. CH_4

Question Number : 100 Question Id : 6780945703 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Burning of fossil fuels causes

Options :

1. Global warming
2. Ozone depletion
3. Acid rain
4. Eutrophication

Number of Questions:	100
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 101 Question Id : 6780945704 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The type of file used for wood work is

Options :

1. Single cut File
2. Rasp cut File
3. Double Cut File
4. Diamond Cut File

Question Number : 102 Question Id : 6780945705 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cutter teeth and work piece, in down milling move in this direction

Options :

1. same
2. opposite
3. perpendicular
4. None

Question Number : 103 Question Id : 6780945706 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A grinder wheel is specified as C-54-M-6-V. “C” stands for

Options :

1. SiC abrasive
2. grade
3. bond
4. manufacture’s prefix

Question Number : 104 Question Id : 6780945707 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a turning operation a mild steel rod of diameter 20mm is turned at a speed of 300 RPM. Then the cutting speed in “m / s” is

Options :

1. 0.1
2. 0.01π
3. $0.1\ \pi$
4. 0.001

Question Number : 105 Question Id : 6780945708 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the M-code for spindle start (Clock wise)?

Options :

1. M 04
2. M 03
3. M 05
4. M06

Question Number : 106 Question Id : 6780945709 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In sharpening a cutting tool, a peripheral force of 200N is applied to a grinding wheel of 100mm diameter rotating at 600 RPM. The power required in Watts is

Options :

1. 200
2. $200\ \pi$
3. 100
4. $100\ \pi$

Question Number : 107 Question Id : 6780945710 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The size of gear is usually specified by

Options :

1. Pitch Circle Diameter
2. Pressure Angle

3. Circular Pitch

4. Diametral Pitch

Question Number : 108 Question Id : 6780945711 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pitch of the screw gauge is 0.01cm and the least count is 0.001mm.The total number of divisions on the circular scale is

Options :

1. Zero

2. 10

3. 50

4. 100

Question Number : 109 Question Id : 6780945712 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For holding wide work, The following type of cramp is used

Options :

1. G. cramp

2. sash cramp

3. hand screw

4. bench hold fast

Question Number : 110 Question Id : 6780945713 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The arbor of the milling machine is used to hold the

Options :

1. work piece

2. spindle

3. mandrel

4. cutting tool

Question Number : 111 Question Id : 6780945714 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Knurling is the process of

Options :

1. finishing a hole which has already been drilled
2. beveling the extreme end of a work piece
3. embossing a diamond shaped pattern on the job
4. taper turning by setting the compound rest at an angle.

Question Number : 112 Question Id : 6780945715 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In shaper, the lift of the tool during idle stroke is ensured by

Options :

1. tool head
2. rachet and pawl mechanism
3. ram adjustment
4. clapper box mechanism

Question Number : 113 Question Id : 6780945716 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Gripper is the type of

Options :

1. power source
2. end effector
3. measuring device
4. locomotory organ

Question Number : 114 Question Id : 6780945717 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Acetylene gas is produced from

Options :

1. calcium chloride
2. calcium carbide

3. carbon

4. calcium carbonate

Question Number : 115 Question Id : 6780945718 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For welding stainless steel by MIG process the gas used is

Options :

1. Pure argon gas

2. Carbon dioxide

3. Argon – oxygen mixture

4. Nitrogen

Question Number : 116 Question Id : 6780945719 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following welding processes use non consumable electrode

Options :

1. MIG welding

2. TIG Welding

3. CIG welding

4. Sub merged arc welding

Question Number : 117 Question Id : 6780945720 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The process of enlarging a machine hole to proper size with a smooth finish is known as

Options :

1. swaging

2. spinning

3. reaming

4. sawing

Question Number : 118 Question Id : 6780945721 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The forging of steel specimen is done at a temperature of

Options :

1. 400^0C

2. 600^0C

3. 800^0C

4. 1000^0C

Question Number : 119 Question Id : 6780945722 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The grain restructure is refined in

Options :

1. cold working process

2. hot working process

3. both in cold working and hot working

4. none of the above

Question Number : 120 Question Id : 6780945723 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The process of decreasing the cross-section of a bar and increasing its length is known as

Options :

1. spinning

2. upsetting

3. drawing down

4. reaming

Question Number : 121 Question Id : 6780945724 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fettling is an operation performed

Options :

1. before casting

2. during casting

3. after casting

4. any time

Question Number : 122 Question Id : 6780945725 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Chaplets are made of

Options :

1. metal

2. wood

3. core sand

4. none

Question Number : 123 Question Id : 6780945726 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ability of sand to withstand high temperatures without fusion or cracking is called

Options :

1. hot strength

2. dry strength

3. permeability

4. refractoriness

Question Number : 124 Question Id : 6780945727 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Slag inclusion in casting is a

Options :

1. surface defect

2. crack

3. notch

4. internal defect

Question Number : 125 Question Id : 6780945728 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In pattern making the shrinkage allowance is provided mainly to compensate

Options :

1. liquid compensate
2. solid contraction
3. solidification contraction
4. combination of liquid contraction and solidification contraction.

Question Number : 126 Question Id : 6780945729 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The algebraic difference between the maximum limit and nominal size is known as

Options :

1. deviation
2. upper deviation
3. lower deviation
4. allowance

Question Number : 127 Question Id : 6780945730 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Bush bearing has internal diameter $33^{+0.025}_{+0.000}$ and the shaft diameter $33^{-0.020}_{-0.045}$ the minimum clearance will be

Options :

1. 0.065
2. 0.020
3. 0.045
4. 0.025

Question Number : 128 Question Id : 6780945731 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In Charpy impact test the specimen is kept like a/an

Options :

1. cantilever
2. fixed beam
3. overhanging beam
4. simply supported beam

Question Number : 129 Question Id : 6780945732 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Invar is named as

Options :

1. low – melting
2. low – expansion alloy
3. high – melting point
4. high – expansion alloy

Question Number : 130 Question Id : 6780945733 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Stellite is

Options :

1. cobalt based alloy
2. molybdemium based alloy
3. vanadium based alloy
4. titanium based alloy

Question Number : 131 Question Id : 6780945734 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Endurance limit is

Options :

1. measurement for fatigue strength
2. criteria for creep phenomenon
3. above which material becomes plastic
4. used in impact test conditions

Question Number : 132 Question Id : 6780945735 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Creep curve is plotted between

Options :

1. strain vs stress

2. stress vs elongation

3. stress vs time

4. strain vs time

Question Number : 133 Question Id : 6780945736 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When cobalt is added to steel

Options :

1. wear resistance will be improved

2. hot hardness will be decreased

3. corrosion resistance will be increased

4. magnetic properties will be improved

Question Number : 134 Question Id : 6780945737 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A simply supported beam of length "2*l*" is carrying a point load "2*W*" at the center of the beam. The maximum deflection at mid span is (Where E is the Young's modulus of the material and I is the moment of inertia)

Options :

1. $\frac{Wl^3}{48EI}$

2. $\frac{Wl^3}{3EI}$

3. $\frac{Wl^4}{8EI}$

4. $\frac{Wl^3}{4EI}$

Question Number : 135 Question Id : 6780945738 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A closely –coiled spring is subjected to a tensile load of 1 kN so that the deflection due to the load in the spring is 1mm . Then the strain energy stored in the spring

Options :

1. 0.5 Nm
2. 0.5 Nmm
3. 1 Nm
4. 100Nmm

Question Number : 136 Question Id : 6780945739 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A thin cylindrical shell of diameter D and thickness t is subjected to an internal pressure p. The longitudinal stress in the shell is

Options :

1. $\frac{pD}{8t}$
2. $\frac{pD}{4t}$
3. $\frac{pD}{2t}$
4. $\frac{pD}{t}$

Question Number : 137 Question Id : 6780945740 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Hook`s law holds good upto

Options :

1. yield point
2. elastic limit
3. plastic limit
4. breaking point

Question Number : 138 Question Id : 6780945741 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ratio of linear stress to the linear strain is called

Options :

1. modulus of elasticity
2. modulus of rigidity
3. bulk modulus
4. Poisson's ratio

Question Number : 139 Question Id : 6780945742 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The materials having same elastic properties in all directions are called

Options :

1. ideal materials
2. uniform materials
3. isotropic materials
4. elastic materials

Question Number : 140 Question Id : 6780945743 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

50kW power is transmitted by the belt system when it is running at 50m/sec. Then difference in tension will be

Options :

1. 1000N
2. 1000kN
3. 500N
4. 500kN

Question Number : 141 Question Id : 6780945744 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the percentage of slip in the belt drive is "S", the percentage of reduction in velocity ratio is

Options :

1. 2S
2. 4S

3. 0.5 S

4. S

Question Number : 142 Question Id : 6780945745 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

V-belts are suitable for transmission of power between two shafts having

Options :

1. long centre distance

2. shorter distance

3. any length

4. angular alignment

Question Number : 143 Question Id : 6780945746 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the number of gear teeth on a pinion is 30 and its velocity ratio is 5, then the number of gear teeth on gear wheel is

Options :

1. 15

2. 6

3. 150

4. 75

Question Number : 144 Question Id : 6780945747 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a flange coupling the bolts are subjected to

Options :

1. bending

2. crushing

3. shearing

4. bending and shearing

Question Number : 145 Question Id : 6780945748 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cam used to minimize jerks is

Options :

1. cycloidal
2. radial
3. cylindrical
4. hyperbolic

Question Number : 146 Question Id : 6780945749 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Throttle valve is operated by the governor through a mechanism of

Options :

1. toggle – mechanism
2. with- worth mechanism
3. bell – crank mechanism
4. elliptical trammel

Question Number : 147 Question Id : 6780945750 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Wood ruff key is generally

Options :

1. square
2. rectangular
3. semi-circular
4. trapezoidal

Question Number : 148 Question Id : 6780945751 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When two spur gears are to be mesh their

Options :

1. module must be same
2. direction of rotation must be same
3. number of teeth must be same
4. clearance must be same

Question Number : 149 Question Id : 6780945752 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Lozenge joint is called a joint of

Options :

1. maximum strength
2. minimum strength
3. uniform strength
4. absolute strength

Question Number : 150 Question Id : 6780945753 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A bolt can be made of uniform strength by

Options :

1. drilling an axial hole through the head up to threaded portion
2. increasing the length of the shank of the bolt
3. increasing the diameter of the shank of the bolt
4. none of the above

Question Number : 151 Question Id : 6780945754 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The specific heat of a gas at constant pressure

Options :

1. is equal to the specific heat at constant volume
2. is two times the specific heat at constant volume
3. is always greater than the specific heat at constant volume
4. is always zero

Question Number : 152 Question Id : 6780945755 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Joule`s law states that

Options :

1. change of internal energy is proportional to the change of temperature

2. change of volume is proportional to the change of temperature

3. change of pressure is proportional to the change of temperature

4. none of the above

Question Number : 153 Question Id : 6780945756 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A process, in which no heat is supplied or rejected and entropy is not constant, is called

Options :

1. isentropic process

2. polytropic process

3. isothermal process

4. hyperbolic process

Question Number : 154 Question Id : 6780945757 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Stirling cycle consists of

Options :

1. two isothermal, and two adiabatic processes

2. two isothermal, one constant volume and one constant pressure processes

3. one isothermal, one adiabatic and two constant volume processes

4. two isothermal and two constant volume processes

Question Number : 155 Question Id : 6780945758 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Bomb calorimeter is used to determine

Options :

1. the viscosity of the liquid

2. calorific value of a liquid or solid fuels

3. calorific value of gaseous fuel

4. the explosive intensity of a bomb

Question Number : 156 Question Id : 6780945759 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a four stroke cycle S.I engine the cam shaft runs

Options :

1. at the same speed as crank shaft

2. at half the speed of crank shaft

3. at twice the speed of crank shaft

4. at 6 times the speed of crank shaft

Question Number : 157 Question Id : 6780945760 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

High air fuel ratio in gas turbines

Options :

1. reduces the exhaust temperature

2. improves thermal efficiency

3. reheating power output

4. restricts damage to the turbine

Question Number : 158 Question Id : 6780945761 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Turbo propeller has the following additional feature over turbo jet

Options :

1. inter cooler

2. diffuser

3. starter

4. propeller

Question Number : 159 Question Id : 6780945762 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The function of diffuser in jet engine is

Options :

1. to increase velocity of air
2. make the flow in steam line
3. convert pressure energy into kinetic energy
4. convert kinetic energy into pressure energy

Question Number : 160 Question Id : 6780945763 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the exhaust from the gas turbine is utilized in heating the compressed air, the efficiency of the gas turbine cycle will

Options :

1. decreases
2. increases
3. remain constant
4. first increases and then decreases

Question Number : 161 Question Id : 6780945764 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a vapour compression refrigeration system, the condenser is placed between

Options :

1. Expansion valve and evaporator
2. low pressure compressor and high pressure compressor
3. evaporator and compressor
4. compressor and expansion valve

Question Number : 162 Question Id : 6780945765 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The volumetric efficiency of an air compressor is the ratio of

Options :

1. actual free air delivered to the displacement volume

2. displacement volume to clearance volume

3. volume before compression to volume after compression

4. none of the above

Question Number : 163 Question Id : 6780945766 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Reaction turbines are also called

Options :

1. free jet turbines

2. mixed flow turbines

3. axial flow turbines

4. pressure turbines

Question Number : 164 Question Id : 6780945767 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In Kaplan turbine direction of flow of water through the runner is

Options :

1. parallel to axis of rotation

2. normal to axis of rotation

3. radial

4. Inclined at 30^0 to the axis of rotation

Question Number : 165 Question Id : 6780945768 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An impulse turbine is used for

Options :

1. low head of water

2. high head of water

3. medium head of water

4. high discharge

Question Number : 166 Question Id : 6780945769 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The suction and delivery heads of centrifugal pumps are 10m and 4m respectively. Its manometric head would be

Options :

1. 6m
2. 14m
3. 40m
4. 4m

Question Number : 167 Question Id : 6780945770 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cavitation occurs in reciprocating pump during

Options :

1. suction stroke
2. delivery stroke
3. at suction and delivery strokes
4. due to pulsating flow

Question Number : 168 Question Id : 6780945771 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Air vessels are fitted for

Options :

1. jet pumps
2. centrifugal pumps
3. deep well pumps
4. reciprocating pumps

Question Number : 169 Question Id : 6780945772 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A solenoid is a device which converts

Options :

1. mechanical energy into electrical energy
2. electrical energy into force

3. electrical energy into heat

4. heat energy into mechanical energy

Question Number : 170 Question Id : 6780945773 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Jigger is a main component part of

Options :

1. crane

2. accumulator

3. intensifier

4. none

Question Number : 171 Question Id : 6780945774 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

perfect synchronization of the pistons of two pneumatic cylinders is possible in

Options :

1. pneumatic circuit

2. hydro pneumatic circuit with two duplex units

3. hydro pneumatic circuit with one duplex unit

4. hydro pneumatic circuit with four duplex units

Question Number : 172 Question Id : 6780945775 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The efficiency of the boiler is defined as

Options :

1. ratio of heat supplied by fuel to the heat absorbed by feed water

2. ratio of heat absorbed by feed water to the heat supplied by fuel in a given time

3. ratio of the weight of water evaporated to the total water supplied in the boiler for a given time

4. Ratio of weight of total water supplied and weight of total water evaporated

Question Number : 173 Question Id : 6780945776 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Draught produced by a chimney is known as

Options :

1. induced draught

2. forced draught

3. Natural draught

4. Advanced draught

Question Number : 174 Question Id : 6780945777 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The critical point is the point at which

Options :

1. melting and boiling temperatures are equal

2. the change of volume accompanying evaporation is maximum

3. the change of volume accompanying evaporation is zero

4. the change of volume accompanying evaporation is exponential

Question Number : 175 Question Id : 6780945778 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If "P_1" is the initial pressure of the steam and "P_2" is critical pressure, then critical pressure ratio is

Options :

1. P_1 / P_2

2. P_2 / P_1

3. (P1 - P2)/ (P1 +P2)

4. (P1 +P2)/ (P1 - P2)

Question Number : 176 Question Id : 6780945779 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The difference of supersaturated temperature and saturated temperature at that pressure is known as

Options :

1. degree of superheat
2. degree of supersaturation
3. degree of undercooling
4. saturation pressure

Question Number : 177 Question Id : 6780945780 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ratio of workdone on the blades to the energy supplied to the blades is called

Options :

1. diagram efficiency
2. nozzle efficiency
3. stage efficiency
4. mechanical efficiency

Question Number : 178 Question Id : 6780945781 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In case of reaction steam turbines

Options :

1. there is enthalpy drop only in fixed blades
2. there is enthalpy drop only in moving blades
3. there is no enthalpy drop either in fixed and moving blades
4. there is enthalpy drop both in fixed and moving blades

Question Number : 179 Question Id : 6780945782 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In pressure compounding, steam is passed through

Options :

1. fixed nozzle-moving blades-fixed blades-moving blades

2. moving blades-fixed nozzles- fixed blades-moving blades

3. fixed nozzle-moving blades-fixed nozzles-moving blades

4. fixed blades-moving blades-fixed nozzles- moving blades

Question Number : 180 Question Id : 6780945783 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Heat pump cycle operated between the condenser temperature of 2^0C and evaporator temperature of -23^0C then COP would be

Options :

1. ½

2. 12

3. 10

4. 2/12

Question Number : 181 Question Id : 6780945784 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Dichloro – diflouro methane is

Options :

1. Freon-11

2. Freon-12

3. Freon-22

4. Freon-21

Question Number : 182 Question Id : 6780945785 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Air is dehumidified by

Options :

1. cooling

2. injecting water

3. injecting steam

4. heating

Question Number : 183 Question Id : 6780945786 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If wet bulb depression is zero, then the relative humidity is equal to

Options :

1. 0%
2. 50%
3. 100%
4. 40%

Question Number : 184 Question Id : 6780945787 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

"P" chart is used for

Options :

1. process control
2. proportion of non-confirming units
3. number of defects per unit
4. percentage error

Question Number : 185 Question Id : 6780945788 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Graphical representation of operations, inspection, delays and storages is called

Options :

1. string diagram
2. operation chart
3. flow diagram
4. flow process chart

Question Number : 186 Question Id : 6780945789 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Therbligs refers to

Options :

1. process chart symbols

2. fundamental hand motion symbols

3. templates

4. PERT chart

Question Number : 187 Question Id : 6780945790 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A process of discovering and indentifying the pertinent information relative to the nature of a specific job is called

Options :

1. job identification

2. job description

3. job analysis

4. job classification

Question Number : 188 Question Id : 6780945791 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Super bazaar falls under

Options :

1. co-operative societies

2. solo proprietorship

3. joint stock companies

4. public sector companies

Question Number : 189 Question Id : 6780945792 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The critical activity has

Options :

1. maximum float

2. minimum float

3. zero float

4. average float

Question Number : 190 Question Id : 6780945793 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following function is not a material management function

Options :

1. inventory control

2. purchasing

3. inspection

4. material handling

Question Number : 191 Question Id : 6780945794 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Gantt chart represents

Options :

1. Temporary storage of in-process inventory

2. Comparison between actual progress with planned progress

3. Balance of work to be carried out

4. Weekly break-down of production requirement

Question Number : 192 Question Id : 6780945795 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Time required to obtain the delivery of fresh supplies, or the time interval between placing the orders and receiving of materials is called

Options :

1. delay time

2. order time

3. lead time

4. none of the above

Question Number : 193 Question Id : 6780945796 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Break even point is the point where

Options :

1. fixed and variable cost lines intersect

2. variable and total cost lines intersect

3. total cost and fixed lines intersect

4. total cost and sales revenue lines intersect

Question Number : 194 Question Id : 6780945797 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The fuel is injected into the cylinder in diesel engine when the piston is

Options :

1. exactly at BDC before compression

2. exactly at TDC after compression

3. approaching TDC during exhaust stroke

4. approaching TDC during compression stroke

Question Number : 195 Question Id : 6780945798 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Provision is made to allow a leaf spring to vary its length is a

Options :

1. swinging shackle

2. rubber u-bolt mounting

3. sliding center bolt

4. spline in the spring eye

Question Number : 196 Question Id : 6780945799 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which gear does not produce axial thrust

Options :

1. spur gear

2. helical gear

3. spiral gear

4. bevel gear

Question Number : 197 Question Id : 6780945800 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Caster is defined as the inclination of

Options :

1. front wheel to the vertical

2. the king pin axis in the fore and aft plane

3. the king pin axis in the transverse vertical plane

4. None of the above

Question Number : 198 Question Id : 6780945801 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A propeller shaft is tubular instead of solid because

Options :

1. a solid shaft is weaker

2. its sag is smaller

3. it is more rigid

4. it resists wind-up

Question Number : 199 Question Id : 6780945802 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

As applied to a braking system, the term brake fade means the

Options :

1. decrease in friction due to wear

2. fade off in efficiency due to heat

3. increase in effort as the shoe clearance increases

4. discoloration of the lining when it is oil soaked

Question Number : 200 Question Id : 6780945803 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a clutch, pressure plate is placed between

Options :

1. fly wheel and clutch plate
2. fly wheel and cover plate
3. clutch plate and cover plate
4. none of the above

APECET 2017 PRELIMINARY KEY
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Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
1	1	51	2	101	2	151	3
2	1	52	2	102	1	152	1
3	1	53	4	103	1	153	2
4	4	54	3	104	3	154	4
5	1	55	1	105	2	155	2
6	2	56	2	106	2	156	2
7	1	57	1	107	1	157	1
8	3	58	3	108	4	158	4
9	3	59	1	109	2	159	4
10	3	60	2	110	4	160	2
11	1	61	4	111	3	161	4
12	1	62	4	112	4	162	1
13	3	63	3	113	2	163	4
14	4	64	1	114	2	164	2
15	1	65	2	115	2	165	2
16	1	66	3	116	1	166	2
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18	3	68	4	118	4	168	4
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